

Appl. No.: 10/821,703
Amdt. Dated: September 25, 2006
Reply to Office Action of: June 29, 2006

AMENDMENTS TO THE DRAWINGS

The attached new sheets of drawings add Fig. 31 and Fig. 32, which illustrate two method embodiments of the invention for further clarification as requested by the Examiner.

Attachments: New Sheet 1
New Sheet 2

REMARKS AND ARGUMENTS

Drawing Objections - 37 CFR 1.83(a)

Applicant respectfully submits that the original drawings show every feature of the invention specified in the claims. However, to further clarify the claims as requested by the Examiner, Figures 31 and 32 have been added.

Both figures are supported in the Specification. Paragraph [0011] of the Specification describes an embodiment of the method illustrated in Figure 31. Paragraph [0012] describes an embodiment of the method illustrated in Figure 32.

Thus, no new subject matter is added by the addition of Figure 31 and Figure 32. Applicant respectfully requests withdrawal of the objection to the drawings under 37 CFR 1.83(a).

Claim Rejections - 35 USC §102

Claims 1-6

The Examiner rejected claims 1-6 under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 5,485,093 to Russell et al. (hereafter referred to as "Russell"). Claim 1 is an independent claim, with claims 2-6 depending therefrom. The following remarks are focused on independent claim 1.

The Examiner states that Russell discloses all of the limitations of claim 1. Claim 1 has been amended for clarification purposes to more fully describe the subject matter therein and to expedite the prosecution process.

Claim 1 now requires "averaging the voltage or current of at least a portion of a first cycle of an AC power signal", and "averaging said voltage or current of a similar portion of a second cycle of said AC power signal." Support for these amendments is in the specification as originally filed. (See Specification: paragraphs [0011], [0012], [0047], [0048], [0053] and [0075].) Russell, on the other hand, teaches a method that requires a conversion step in which the data samples are converted into energy values and stored in an output buffer. (column 2, lines 63-66). The stored energy values are then compared with a set of threshold values, calculated based on arithmetic averages of historic energy values stored in a buffer. (column 2, lines 44-48).

Unlike Russell, claim 1 does not require an additional step that converts voltage or current into energy. This additional step taught by Russell discloses calculating the energy in a signal by measuring and using a period of time over which voltages or currents are measured (column 2, lines 63-67; column 8, lines 20-34). Claim 1 averages voltage or current directly without calculating energy. Thus, it requires one less step and thereby saves time, processing power, and equipment compared to the method disclosed in Russell. Additionally, the calculated energy value as disclosed by Russell is not inherently determinable under claim 1. Claim 1 measures and uses a set of discrete voltage or current values. These discrete voltage and current values are not inherent in an energy value, and vice versa, because many different energies can include the same set of voltages or currents if the overall voltage or current waveforms are different, and equal energies can be derived from different sets of voltages and currents. Thus, the energy value for the

discrete voltage or current values measured is not inherently determinable under claim 1.

Claim 1 is now allowable over Russell.

Claims 2-6 depend from allowable claim 1 and are thus also allowable.

Claims 7-10

The Examiner also rejected claims 7-10 under 35 U.S.C. 102(b) as anticipated by Russell. Claim 7 is an independent claim, with claims 8-10 depending therefrom. The following remarks are focused on independent claim 7.

The Examiner states that Russell teaches all of the limitations of claim 7. Applicant respectfully disagrees with this conclusion. Claim 7 requires adjusting the amplitude of either past or future cycles of a power supply signal to adjust for amplitude decay or increase of power supply signal, and subtracting the present cycle from the past or future cycle to form an arc signal artifact waveform. Russell does not teach, suggest, or disclose adjusting the amplitude of past or future cycles of a power supply signal to adjust for amplitude decay or increase. Nor does Russell teach, suggest, or disclose subtracting the present cycle of a power supply signal from a past or future cycle to form an arc signal artifact waveform. Claim 7 is accordingly allowable.

Claims 8-10 depend directly or indirectly from allowable claim 7, and are therefore also allowable.


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CONCLUSION

Claims 1-10 are now in condition for allowance, and a Notice of Allowance is respectfully requested.

Respectfully submitted,

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